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ARMY ELECTRONICS COMMAND WHITE SANDS MISSILE RANGE N--ETC F/G 4/2
12828D LANCE MISSILE NO. 3314, ROUND NO. 312 ESL (3 MARCH 1978)--ETC(U)
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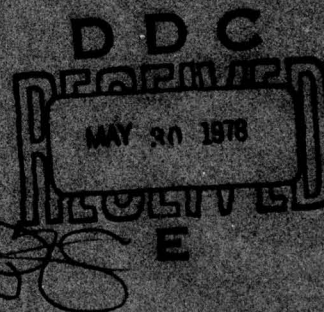
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METEOROLOGICAL DATA REPORT

120200 LARCH
MISSILE NO. 3314, ROUND NO. 312 ESL
(3 MARCH 1978)

BY

WSPR METEOROLOGICAL TEAM



ATMOSPHERIC SCIENCES LABORATORY
WHITE SANDS MISSILE RANGE, NEW MEXICO

ECOM

UNITED STATES ARMY ELECTRONICS COMMAND

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INTRODUCTION

12828D Lance, Missile Number 3314, Round Number 312 ESL, was launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 1530 HRS MST, 3 March 1978. The scheduled launch time was 1530 HRS MST.

DISCUSSION

Meteorological data were recorded and reduced by the WSMR Meteorological Team, Atmospheric Sciences Laboratory (ASL), WSMR, New Mexico. The data are presented in the following tabulations.

ELEVATION	3,987	FEET/MSL
PRESSURE	874.8	MBS
TEMPERATURE	18.0	°C
RELATIVE HUMIDITY	25	%
DEW POINT	-2.3	°C
DENSITY	1,043	GM/M ³
WIND SPEED	28	MPH
WIND DIRECTION	270	DEGREES
CLOUD COVER	1 1	Cu Ac

TABLE I. SURFACE OBSERVATIONS TAKEN AT LC-33
AT 1530 HRS MST/3 MARCH 1978

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)	HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
SUR	240	20.0	2100	266	28.0
100	257	20.5	2200	267	27.0
200	273	21.0	2300	265	27.0
300	276	23.5	2400	263	26.5
400	279	25.5	2500	262	26.0
500	280	25.0	2600	260	25.5
600	281	24.5	2700	261	24.5
700	277	26.0	2800	261	23.5
800	272	27.5	2900	261	24.5
900	270	28.5	3000	260	25.0
1000	268	29.5	3100	260	26.5
1100	270	29.0	3200	259	27.5
1200	271	28.5	3300	259	28.5
1300	270	28.5	3400	258	29.0
1400	269	28.5	3500	260	30.5
1500	269	29.5	3600	261	32.0
1600	268	30.5	3700	262	32.0
1700	267	30.5	3800	262	32.0
1800	265	30.5	3900	264	32.0
1900	265	30.0	4000	265	32.0
2000	264	29.0	4100	264	31.0

TABLE II. PILOT-BALLOON-MEASURED WIND DATA, RELEASED FROM LC-33
AT 1520 HRS MST/3 MARCH 1978.
12828D LANCE, MISSILE NO. 3314, ROUND NO. 312 ESL

PIBAL RELEASE POINT WSTM COORDINATES:

X = 486,296.83 Y = 185,251.85 Z = 3,986.67

APPROXIMATELY: 815 FEET SSE OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
4200	262	30.0
4300	262	28.0
4400	262	26.0
4500	261	26.0
4600	259	26.0
4700	262	26.5
4800	265	26.5
4900	266	26.5
5000	266	26.0
5100	267	26.0
5200	268	25.5
5300	268	25.0
5400	267	24.5
5500	267	24.5
5600	267	24.5
5700	269	23.5
5800	271	22.0
5900	272	22.0
6000	273	21.5
6100	274	21.5
6200	275	21.0
6300	275	21.5
6400	274	21.5
6500	275	22.0
6600	275	22.0

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
6700	280	21.5
6800	285	20.5
6900	286	20.5
7000	287	20.5
7100	285	22.5
7200	283	24.0
7300	284	26.0
7400	285	28.0
7500	284	28.0
7600	283	27.5
7700	284	28.0
7800	284	28.0
7900	285	27.5
8000	286	27.0
8100	290	27.0
8200	294	27.0
8300	296	27.5
8400	298	27.5
8500	300	28.0
8600	301	28.5
8700	303	29.5
8800	304	30.5
8900	304	31.0
9000	304	31.0

TABLE II. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
SUR	270	20.0
100	281	21.0
200	292	21.5
300	293	22.5
400	293	23.0
500	288	22.5
600	282	21.5
700	281	21.5
800	280	21.5
900	277	23.5
1000	273	25.0
1100	269	26.0
1200	264	26.5
1300	261	24.0
1400	258	21.5
1500	255	21.5
1600	252	21.0
1700	249	21.0
1800	246	20.5
1900	252	21.5
2000	258	22.5

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
2100	262	24.0
2200	266	25.5
2300	265	26.0
2400	263	26.0
2500	265	24.5
2600	267	22.5
2700	270	21.5
2800	272	20.5
2900	272	22.0
3000	272	23.0
3100	273	23.5
3200	273	23.5
3300	273	23.5
3400	272	23.5
3500	273	24.0
3600	274	24.5
3700	276	24.5
3800	278	24.5
3900	280	26.0
4000	281	27.0
4100	282	27.0

TABLE III. PILOT-BALLOON-MEASURED WIND DATA, RELEASED FROM LC-33
AT 1530 HRS MST/3 MARCH 1978
12828D LANCE, MISSILE NO. 3314, ROUND NO. 312 ESL

PIBAL RELEASE POINT WSTM COORDINATES:

X = 486,296.83 Y = 185,251.85 Z = 3,986.67

APPROXIMATELY: 815 FEET SSE OF LAUNCHER.

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)	HEIGHT (FEET)	DIRECTION (DEGREES)	SPEED (MPH)
4200	282	27.0	6700	277	21.0
4300	284	27.5	6800	277	21.0
4400	285	27.5	6900	279	21.5
4500	284	27.5	7000	280	21.5
4600	282	27.5	7100	284	23.5
4700	282	27.5	7200	287	25.0
4800	282	27.0	7300	286	27.0
4900	283	25.5	7400	285	28.5
5000	284	24.0	7500	287	30.0
5100	284	24.5	7600	288	31.0
5200	284	24.5	7700	292	30.5
5300	281	24.5	7800	296	30.0
5400	278	24.5	7900	296	29.5
5500	278	24.5	8000	296	29.0
5600	278	24.0	8100	298	28.5
5700	277	24.5	8200	300	28.0
5800	276	25.0	8300	301	29.5
5900	276	24.5	8400	302	31.0
6000	275	23.5	8500	302	31.5
6100	277	23.0	8600	302	31.5
6200	279	22.5	8700	298	32.5
6300	279	22.0	8800	294	33.5
6400	278	21.5	8900	295	34.5
6500	277	21.5	9000	296	35.0
6600	276	21.0			

TABLE III. (CONT)

NOTE: WIND DIRECTION DATA ARE REFERENCED TRUE NORTH.

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

SIGNIFICANT LEVEL DATA
U620020149
WHITE SANDS
TABLE IV.

STATION ALTITUDE 3989.00 FEET MSL
3 MAR. 78
ASCENSION NO. 149

PRESSURE GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE		REL. HUM. PERCENT
872.1	3989.0	17.7	-1.0
864.4	4240.8	16.2	-2.8
850.0	4707.3	14.2	-4.0
747.4	8193.9	2.6	-7.3
700.0	9920.0	-1.4	-7.9
673.8	10911.8	-4.5	-8.9
637.4	12339.4	-7.2	-17.6
612.2	13366.7	-9.1	-21.1
604.0	13709.8	-7.6	-27.7
587.6	14413.0	-6.8	-25.9
545.6	16295.3	-11.1	-20.4
520.4	17482.0	-12.7	-23.2
500.0	18477.2	-15.4	-23.9
483.2	19318.8	-18.0	-29.4
431.4	22056.8	-25.2	-35.3
409.2	23309.7	-26.8	-43.8
400.0	23848.3	-25.8	-44.1
382.8	24887.0	-27.8	-44.7
343.6	27396.6	-34.1	-50.5
331.4	28222.7	-35.6	
306.4	30006.9	-36.2	
300.0	30487.0	-35.6	
250.0	14586.6	-41.5	
220.2	37383.7	-44.8	
200.0	39474.5	-47.8	
161.8	43979.5	-54.6	
150.0	45546.5	-59.4	
128.2	48720.3	-64.6	
121.6	49774.1	-65.0	
100.0	53608.7	-71.4	

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

UPPER AIR DATA
U620020149
WHITE SANDS

TABLE V.

STATION ALTITUDE 3989.00 FEET MSL
3 MAR. 78
ASCENSION NO. 149

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEW POINT CENTIGRADE			KNOTS	DEGREES(TN)	DIRECTION	SPEED KNOTS	
3989.0	872.1	17.7	-1.0	28.0	1042.0	665.2	300.0	300.0	12.0	1.000258
4000.0	871.8	17.6	-1.1	28.0	1041.8	665.1	299.6	299.6	12.1	1.000257
4500.0	856.4	15.1	-3.5	27.6	1032.8	662.1	284.9	284.9	13.4	1.000252
5000.0	840.9	13.2	-4.1	29.7	1020.8	659.9	273.5	273.5	15.5	1.000248
5500.0	825.5	11.6	-4.3	32.5	1004.0	658.0	265.1	265.1	18.1	1.000245
6000.0	810.4	9.9	-4.7	35.4	995.4	656.1	259.0	259.0	20.8	1.000242
6500.0	795.6	8.2	-5.1	38.3	983.0	654.1	261.0	261.0	21.7	1.000239
7000.0	781.1	6.6	-5.7	41.2	970.8	652.2	263.1	263.1	22.6	1.000236
7500.0	766.8	4.9	-6.3	44.0	958.9	650.2	266.1	266.1	23.5	1.000232
8000.0	752.8	3.2	-7.0	46.9	947.1	648.3	269.6	269.6	23.8	1.000229
8500.0	738.8	1.9	-7.3	50.3	934.0	646.7	275.4	275.4	22.5	1.000226
9000.0	724.9	.7	-7.5	54.1	920.3	645.3	281.1	281.1	21.2	1.000223
9500.0	711.3	-.4	-7.7	57.8	906.9	643.9	286.6	286.6	19.7	1.000219
10000.0	697.9	-1.6	-8.0	61.8	893.8	642.5	290.2	290.2	19.7	1.000216
10500.0	684.6	-3.2	-8.5	66.8	881.9	640.6	292.2	292.2	20.4	1.000213
11000.0	671.5	-4.7	-9.4	69.3	869.8	638.9	294.0	294.0	23.0	1.000210
11500.0	658.6	-5.6	-12.2	59.5	856.3	637.7	295.4	295.4	26.2	1.000203
12000.0	645.9	-6.6	-15.3	49.7	843.1	636.4	294.1	294.1	28.6	1.000198
12500.0	633.4	-7.5	-18.1	42.1	829.9	635.2	292.3	292.3	31.0	1.000193
13000.0	621.1	-8.4	-19.8	39.1	816.7	634.1	288.8	288.8	33.2	1.000189
13500.0	609.0	-8.5	-23.1	29.6	801.2	633.9	285.2	285.2	36.7	1.000184
14000.0	597.2	-7.3	-27.0	18.8	782.1	635.4	290.3	290.3	39.8	1.000178
14500.0	585.6	-7.0	-25.5	21.2	766.1	635.7	301.6	301.6	42.6	1.000175
15000.0	574.2	-8.1	-23.3	28.1	754.3	634.4	305.4	305.4	46.0	1.000173
15500.0	563.0	-9.3	-21.9	35.0	742.7	633.1	305.6	305.6	47.7	1.000171
16000.0	552.0	-10.4	-20.8	41.9	731.3	631.7	304.8	304.8	49.2	1.000169
16500.0	541.2	-11.4	-20.9	45.1	719.6	630.6	301.1	301.1	50.8	1.000167
17000.0	530.5	-12.1	-22.0	43.0	707.3	629.7	297.7	297.7	53.0	1.000163
17500.0	520.0	-12.7	-23.2	41.1	695.2	628.9	294.5	294.5	55.9	1.000160
18000.0	509.7	-14.1	-23.5	44.6	685.0	627.2	291.7	291.7	58.9	1.000158

STATION ALTITUDE 3989.00 FEET MSL
 3 MAR. 78 1520 HRS MST
 ASCENSION NO. 149

UPPER AIR DATA
 0620020149
 WHITE SANDS
 TABLE V. (CONT)

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
18500.0	499.5	-15.5	47.7	674.9	625.6	290.2	60.7	1.000155
19000.0	489.5	-17.0	40.5	665.4	623.6	288.9	62.4	1.000152
19500.0	479.6	-18.5	36.1	655.8	621.8	287.8	63.8	1.000149
20000.0	469.8	-19.8	36.5	645.7	620.2	287.0	63.9	1.000147
20500.0	460.1	-21.1	36.9	635.8	618.6	286.3	64.1	1.000144
21000.0	450.7	-22.4	37.2	626.0	617.0	286.2	65.1	1.000142
21500.0	441.5	-23.7	37.6	616.4	615.3	286.6	67.0	1.000139
22000.0	432.4	-25.1	38.0	607.0	613.7	287.5	69.4	1.000137
22500.0	423.4	-25.8	30.9	596.1	612.8	288.6	72.2	1.000134
23000.0	414.6	-26.4	22.9	585.2	612.0	289.3	74.2	1.000131
23500.0	405.9	-26.4	17.3	573.1	611.9	289.8	75.5	1.000128
24000.0	397.4	-26.1	16.3	560.4	612.4	290.0	76.5	1.000126
24500.0	389.1	-27.1	17.3	550.8	611.2	290.8	78.6	1.000123
25000.0	380.9	-28.1	18.0	541.5	609.9	291.7	80.6	1.000121
25500.0	372.8	-29.3	17.8	532.7	608.3	292.6	82.7	1.000119
26000.0	364.9	-30.6	17.6	524.0	606.8	293.5	85.2	1.000117
26500.0	357.1	-31.8	17.4	515.5	605.2	294.3	88.6	1.000115
27000.0	349.5	-33.1	17.2	507.2	603.6	295.0	91.9	1.000113
27500.0	342.0	-34.3	14.9**	498.8	602.1	295.2	93.9	1.000111
28000.0	334.6	-35.2	4.6**	489.9	601.0	295.3	95.9	1.000109
28500.0	327.4	-35.7		480.3	600.3	294.7	95.7	1.000107
29000.0	320.3	-35.9		470.2	600.1	293.8	94.3	1.000105
29500.0	313.3	-36.0		460.3	599.9	291.9	96.5	1.000103
30000.0	306.5	-36.2		450.6	599.7	290.0	102.3	1.000100
30500.0	299.8	-35.6		439.7	600.4	288.7	113.3	1.000098
31000.0	293.2	-36.3		431.4	599.5	288.3	120.5	1.000096
31500.0	286.8	-37.1		423.2	598.6	288.0	126.3	1.000094
32000.0	280.5	-37.8		415.1	597.7	288.0	121.3	1.000092
32500.0	274.3	-38.5		407.2	596.8	287.9	116.2	1.000091
33000.0	268.3	-39.2		399.5	595.9	286.1	110.6	1.000089

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

UPPER AIR DATA
 0620020149
 WHITE SANDS
 TABLE V. (CONT)

STATION ALTITUDE 3989.00 FEET MSL
 3 MAR. 78
 1520 HRS MST
 ASCENSION NO. 149

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES(TN)	SPEED KNOTS	
33500.0	262.4	-39.9		391.9	594.9	288.2	106.1	1.000087
34000.0	256.6	-40.7		384.5	594.0	288.5	107.1	1.000086
34500.0	251.0	-41.4		377.2	593.1	288.5	108.0	1.000084
35000.0	245.4	-42.0		369.8	592.3	288.4	108.9	1.000082
35500.0	239.8	-42.6		362.4	591.6	288.2	109.0	1.000081
36000.0	234.5	-43.2		355.2	590.8	287.9	108.8	1.000079
36500.0	229.2	-43.8		348.1	590.0	287.6	105.9	1.000078
37000.0	224.1	-44.3		341.2	589.3	287.4	102.4	1.000076
37500.0	219.0	-45.0		334.4	588.5	286.9	102.1	1.000074
38000.0	214.0	-45.7		327.8	587.6	286.3	102.4	1.000073
38500.0	209.2	-46.4		321.4	586.6	286.0	107.6	1.000072
39000.0	204.4	-47.1		315.1	585.7	285.8	113.6	1.000070
39500.0	199.8	-47.8		308.9	584.8	284.9	113.0	1.000069
40000.0	195.1	-48.6		302.7	583.8	283.7	110.3	1.000067
40500.0	190.6	-49.3		296.7	582.8			1.000066
41000.0	186.1	-50.1		290.7	581.8			1.000065
41500.0	181.8	-50.9		284.9	580.8			1.000063
42000.0	177.6	-51.6		279.3	579.9			1.000062
42500.0	173.5	-52.4		273.7	578.9			1.000061
43000.0	169.4	-53.1		268.3	577.9			1.000060
43500.0	165.5	-53.9		262.9	576.9			1.000059
44000.0	161.6	-54.7		257.7	575.8			1.000057
44500.0	157.8	-55.2		253.3	573.8			1.000056
45000.0	154.0	-57.7		249.1	571.8			1.000055
45500.0	150.3	-59.3		244.9	569.8			1.000055
46000.0	146.7	-60.1		239.9	568.6			1.000053
46500.0	143.1	-61.0		234.9	567.5			1.000052
47000.0	139.6	-61.8		230.1	566.4			1.000051
47500.0	136.2	-62.6		225.3	565.3			1.000050
48000.0	132.9	-63.4		220.7	564.2			1.000049

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

UPPER AIR DATA
 0620020149
 WHITE SANDS
 TABLE V. (CONT)

STATION ALTITUDE 3989.00 FEET MSL
 3 MAR. 78
 1520 HRS MST
 ASCENSION NO. 149

GEODETIC COORDINATES
 32.40043 LAT DEG
 106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
48500.0	129.6	-64.2		216.1	563.1			1.000048
49000.0	126.4	-64.7		211.3	562.5			1.000047
49500.0	123.3	-64.9		206.2	562.2			1.000046
50000.0	120.2	-65.4		201.5	561.6			1.000045
50500.0	117.2	-66.2		197.3	560.4	279.9	54.5	1.000044
51000.0	114.2	-67.0		193.1	559.3	279.7	53.4	1.000043
51500.0	111.4	-67.9		189.0	558.2	279.2	55.7	1.000042
52000.0	108.6	-68.7		185.0	557.0	278.5	59.8	1.000041
52500.0	105.8	-69.5		181.1	555.9	277.3	62.1	1.000040
53000.0	103.2	-70.4		177.2	554.7	274.7	60.7	1.000039
53500.0	100.6	-71.2		173.5	553.6	272.0	59.5	1.000039
54000.0	98.0	-71.7		169.4	553.0	269.8	58.5	1.000038
54500.0	95.5	-72.0		165.3	552.5	267.6	57.7	1.000037
55000.0	93.0	-72.3		161.3	552.1	267.0	57.5	1.000036
55500.0	90.6	-72.7		157.5	551.6	267.2	57.7	1.000035
56000.0	88.3	-73.0		153.7	551.2	267.5	55.8	1.000034
56500.0	86.0	-73.3		150.0	550.7	267.9	50.1	1.000033
57000.0	83.8	-71.2		144.6	553.6	268.4	44.2	1.000032
57500.0	81.7	-68.5		139.1	557.3	268.8	33.5	1.000031
58000.0	79.6	-65.8		133.8	561.0	269.5	22.9	1.000030
58500.0	77.6	-65.8		130.5	560.9	268.1	13.3	1.000029
59000.0	75.7	-66.7		127.7	559.8	256.3	4.1	1.000028
59500.0	73.8	-67.5		125.0	558.7	144.2	1.9	1.000028
60000.0	71.9	-68.3		122.4	557.6	156.3	2.5	1.000027
60500.0	70.1	-69.1		119.8	556.5	175.8	2.9	1.000027
61000.0	68.4	-69.2		116.8	556.3	231.9	5.4	1.000026
61500.0	66.6	-69.3		113.9	556.3	246.8	9.5	1.000025
62000.0	64.9	-69.3		111.0	556.2	248.5	11.6	1.000025
62500.0	63.3	-69.3		108.2	556.2	248.9	13.4	1.000024
63000.0	61.7	-69.4		105.5	556.1	249.2	14.3	1.000023

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

STATION ALTITUDE 3989.00 FEET MSL
3 MAR. 78 1520 HRS MST
ASCENSION NO. 149

UPPER AIR DATA
0620020149
WHITE SANDS
TABLE V. (CONT)

GEODETTIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	WIND DATA		INDEX OF REFRACTION
					DIRECTION DEGREES(TN)	SPEED KNOTS	
63500.0	60.1	-69.4		102.8	249.4	14.2	1.000023
64000.0	58.6	-69.5		100.2	249.8	14.1	1.000022
64500.0	57.1	-69.5		97.7	254.2	14.0	1.000022
65000.0	55.7	-69.5		95.2	258.6	14.0	1.000021
65500.0	54.3	-69.6		92.8	265.9	13.9	1.000021
66000.0	52.9	-69.6		90.5	275.0	14.1	1.000020
66500.0	51.5	-69.7		88.2	283.3	13.7	1.000020
67000.0	50.2	-69.7		86.0	293.5	10.3	1.000019
67500.0	49.0	-69.2		83.7	312.2	7.6	1.000019
68000.0	47.8	-68.5		81.3	343.2	4.3	1.000018
68500.0	46.6	-67.8		79.1	49.8	4.3	1.000018
69000.0	45.5	-67.1		76.9	75.0	6.1	1.000017
69500.0	44.3	-66.5		74.7	83.1	6.1	1.000017
70000.0	43.3	-65.8		72.7	91.2	6.2	1.000016
70500.0	42.2	-65.1		70.7	84.7	3.4	1.000016
71000.0	41.2	-64.5		68.7	30.4	.9	1.000015
71500.0	40.1	-63.8		66.8	298.1	2.9	1.000015
72000.0	39.2	-63.1		64.9	290.2	6.2	1.000014
72500.0	38.2	-62.5		63.1	288.0	9.4	1.000014
73000.0	37.3	-61.8		61.4	291.1	12.6	1.000014
73500.0	36.3	-61.1		59.7	293.0	15.8	1.000013
74000.0	35.4	-60.5		58.1	294.5	19.0	1.000013
74500.0	34.6	-59.8		56.4	296.3	22.2	1.000013
75000.0	33.7	-59.1		54.9	297.6	25.3	1.000012
75500.0	32.9	-58.5		53.4	298.3	25.7	1.000012
76000.0	32.1	-57.8		51.9	298.8	24.5	1.000012
76500.0	31.3	-57.1		50.5	299.3	23.4	1.000011
77000.0	30.5	-56.5		49.1	302.2	17.6	1.000011
77500.0	29.8	-55.9		47.8	308.3	11.7	1.000011
78000.0	29.1	-55.5		46.6	325.3	6.2	1.000010

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

UPPER AIR DATA
0620020149
WHITE SANDS
TABLE V. (CONT)

STATION ALTITUDE 3989.00 FEET MSL
3 MAR. 78
ASCENSION NO. 149

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	DEWPOINT CENTIGRADE				DIRECTION DEGREES(TN)	SPEED KNOTS	
78500.0	28.4	-55.2			45.4	575.1	31.9	3.5	1.000010
79000.0	27.7	-54.9			44.2	575.6	83.9	7.2	1.000010
79500.0	27.1	-54.5			43.1	576.1	94.6	10.7	1.000010
80000.0	26.4	-54.2			42.1	576.5	98.1	11.1	1.000009
80500.0	25.8	-53.8			41.0	577.0	101.3	11.6	1.000009
81000.0	25.2	-53.5			40.0	577.4	103.8	9.8	1.000009
81500.0	24.6	-53.1			39.0	577.9	107.5	6.1	1.000009
82000.0	24.0	-52.8			38.0	578.3	121.7	2.6	1.000008
82500.0	23.5	-52.4			37.0	578.8	228.6	1.8	1.000008
83000.0	22.9	-52.1			36.1	579.2	256.7	5.0	1.000008
83500.0	22.4	-51.7			35.2	579.7	262.5	8.5	1.000008
84000.0	21.9	-51.4			34.3	580.1	263.0	10.7	1.000008
84500.0	21.3	-51.0			33.5	580.6	263.1	12.5	1.000007
85000.0	20.8	-50.7			32.6	581.1	263.1	14.3	1.000007
85500.0	20.3	-50.3			31.8	581.5	260.2	13.5	1.000007
86000.0	19.9	-50.0			31.0	581.9	256.7	12.5	1.000007
86500.0	19.4	-49.7			30.3	582.3	252.5	11.6	1.000007
87000.0	19.0	-49.5			29.5	582.7	244.1	9.7	1.000007
87500.0	18.5	-49.2			28.8	583.0	232.2	8.2	1.000006
88000.0	18.1	-48.9			28.1	583.4	218.9	7.3	1.000006
88500.0	17.7	-48.6			27.4	583.7	227.4	7.9	1.000006
89000.0	17.3	-48.3			26.8	584.1	234.5	8.6	1.000006
89500.0	16.9	-48.1			26.1	584.5	243.9	10.1	1.000006
90000.0	16.5	-47.8			25.5	584.8	259.5	15.2	1.000006
90500.0	16.1	-47.5			24.9	585.2	267.0	20.8	1.000006
91000.0	15.7	-47.2			24.3	585.6	270.8	25.9	1.000005
91500.0	15.4	-47.0			23.7	585.9	272.3	28.8	1.000005
92000.0	15.0	-46.7			23.1	586.3	273.6	31.8	1.000005
92500.0	14.7	-46.4			22.5	586.6	274.2	33.5	1.000005
93000.0	14.3	-46.1			22.0	587.0	273.6	32.3	1.000005

STATION ALTITUDE 3949.00 FEET MSL
3 MAR. 78
ASCENSION NO. 149

UPPER AIR DATA
0620020149
WHITE SANDS
TABLE V. (CONT)

GEODETIC COORDINATES
32°40043 LAT DEG
106°37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
						DIRECTION DEGREES (TN)	SPEED KNOTS	
93500.0	14.0	-45.7		21.5	587.5	273.1	31.1	1.000005
94000.0	13.7	-45.2		20.9	588.2	272.9	30.9	1.000005
94500.0	13.4	-44.7		20.4	588.9	273.6	32.8	1.000005
95000.0	13.1	-44.2		19.9	589.5	274.2	34.6	1.000004
95500.0	12.8	-43.7		19.4	590.2			1.000004
96000.0	12.5	-43.2		18.9	590.8			1.000004
96500.0	12.2	-42.6		18.5	591.5			1.000004
97000.0	11.9	-42.1		18.0	592.1			1.000004
97500.0	11.7	-41.6		17.6	592.8			1.000004
98000.0	11.4	-41.1		17.1	593.4			1.000004

STATION ALTITUDE 3989.00 FEET MSL
3 MAR. 78
ASCENSION NO. 149

MANDATORY LEVELS
U620020149
WHITE SANDS
TABLE VI.

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	F _{ET}	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	4706.	14.2	-4.0	28.	279.8	14.2
800.0	4368.	8.7	-5.0	37.	260.5	21.5
750.0	8101.	2.9	-7.1	47.	270.7	23.5
700.0	9920.	-1.4	-7.9	61.	289.8	19.6
650.0	11839.	-6.2	-14.3	53.	294.5	27.9
600.0	13882.	-7.4	-27.3	18.	288.9	39.1
550.0	14097.	-10.6	-20.7	43.	304.0	49.5
500.0	14484.	-15.4	-23.9	48.	290.2	60.7
450.0	21058.	-22.5	-33.1	37.	286.3	65.4
400.0	21864.	-25.8	-44.1	16.	289.9	76.3
350.0	26994.	-33.0	-49.5	17.	295.0	92.1
300.0	30517.	-35.6			288.5	114.7
250.0	34627.	-41.5			288.5	108.4
200.0	39530.	-47.8			284.6	112.4
175.0	42394.	-52.1			9999.0	9999.0XX
150.0	45624.	-59.4			9999.0	9999.0XX
125.0	49317.	-64.8			9999.0	9999.0XX
100.0	53720.	-71.4			270.5	58.8
80.0	58042.	-66.3			269.6	18.8
70.0	60686.	-69.2			223.3	4.4
60.0	63706.	-69.4			249.6	14.1
50.0	67273.	-69.7			311.7	7.6
40.0	71700.	-63.7			290.7	5.8
30.0	77596.	-56.0			319.6	7.4
25.0	81424.	-53.3			111.6	4.4
20.0	84173.	-50.1			252.1	11.5
15.0	92387.	-46.7			273.9	32.8

XX WIND DATA INVALID DUE TO MISSING RAW AZIMUTH AND ELEVATION ANGLES.

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

SIGNIFICANT LEVEL DATA
V620060019
S M R
TABLE VII.

STATION ALTITUDE 3997.30 FEET MSL
3 MAR. 78
ASCENSION NO. 19

PRESSURE	GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE	
872.3	3997.3	17.6	7	32.0
850.0	4722.5	14.3	-3.5	29.0
770.8	7394.3	6.8	-5.2	42.0
700.0	9953.1	-1.2	-9.3	54.0
666.3	11235.7	-4.7	-9.5	69.0
653.9	11718.9	-7.0	-7.7	95.0
637.8	12355.7	-8.3	-9.1	94.0
629.3	12697.3	-8.5	-14.4	62.0
612.3	13393.2	-9.1	-20.5	39.0
587.8	14424.7	-11.4	-23.4	36.0
563.8	15473.3	-11.2	-23.9	34.0
531.3	16960.9	-13.4	-23.5	42.0
523.8	17315.2	-14.1	-23.2	46.0
514.3	17771.2	-13.4	-22.5	46.0
500.0	18472.5	-15.0	-27.6	33.0
456.8	20685.5	-21.1	-32.2	36.0
441.8	21489.9	-23.2	-32.5	42.0
435.3	21844.7	-24.2	-34.7	37.0
400.0	23848.3	-28.3	-40.1	31.0
394.3	24186.4	-26.9	-41.3	24.0
388.3	24548.3	-27.4	-41.3	25.0
344.3	27349.2	-33.3	-46.5	25.0
321.8	28897.5	-35.2	-47.8	26.0
300.0	30495.8	-35.8	-48.7	25.0
261.8	33573.7	-39.0		
250.0	34603.9	-41.1		
242.3	35297.4	-42.5		
232.3	36228.1	-42.9		
200.0	39496.6	-47.6		
176.8	42136.3	-51.6		

GEODETIC COORDINATES
32°48034 LAT DEG
106°42307 LON DEG

SIGNIFICANT LEVEL DATA
U620060019
S M R
TABLE VII. (CONT)

STATION ALTITUDE 3997.30 FEET MSL
3 MAR. 78 1520 HRS MST
ASCENSION NO. 19

GEODETIC COORDINATES
32.48034 LAT DEG
106.42307 LON DEG

UPPER AIR DATA
J620060019
5 M R

TABLE VIII.

STATION ALTITUDE 3997.30 FEET MSL
3 MAR. 78 1520 HRS MST
ASCENSION NO. 19

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
3997.3	872.3	17.6	.7	32.0	1042.2	665.2	260.0	24.1	1.000261
4000.0	872.2	17.6	.7	32.0	1042.2	665.2	260.0	24.1	1.000261
4500.0	856.8	15.3	-2.2	29.9	1032.3	662.4	261.3	23.9	1.000254
5000.0	841.4	13.5	-3.5	30.4	1020.3	660.3	262.5	23.8	1.000249
5500.0	826.1	12.1	-3.7	32.8	1006.7	658.7	263.8	23.7	1.000246
6000.0	811.2	10.7	-4.0	35.2	993.4	657.1	265.1	23.6	1.000243
6500.0	796.5	9.3	-4.4	37.6	980.2	655.4	266.4	23.5	1.000239
7000.0	782.0	7.9	-4.8	40.1	967.3	653.8	267.8	23.4	1.000236
7500.0	767.7	6.5	-5.3	42.5	954.6	652.1	271.4	23.3	1.000233
8000.0	753.4	4.9	-6.1	44.8	942.1	650.3	276.1	23.5	1.000229
8500.0	739.4	3.3	-6.8	47.2	929.8	648.4	280.7	23.8	1.000225
9000.0	725.6	1.8	-7.6	49.5	917.7	646.5	285.2	24.2	1.000222
9500.0	712.0	.2	-8.5	51.9	905.8	644.7	289.5	24.4	1.000218
10000.0	698.7	-1.3	-9.3	54.5	894.0	642.8	293.7	24.7	1.000215
10500.0	685.4	-2.7	-9.3	60.4	881.4	641.2	297.4	25.3	1.000212
11000.0	672.4	-4.1	-9.4	66.2	869.0	639.6	299.7	26.3	1.000209
11500.0	659.5	-6.0	-8.3	83.2	858.2	637.4	301.8	27.3	1.000208
12000.0	646.7	-7.6	-8.3	94.6	846.7	635.5	302.0	28.6	1.000206
12500.0	634.2	-8.4	-11.1	80.5	833.1	634.4	300.2	30.3	1.000200
13000.0	621.8	-8.8	-16.8	52.0	818.5	633.8	298.5	32.0	1.000191
13500.0	609.7	-9.3	-20.8	38.7	804.6	633.0	294.6	34.3	1.000186
14000.0	597.8	-10.5	-22.2	37.2	792.2	631.6	290.1	37.1	1.000182
14500.0	586.0	-11.4	-23.5	35.9	779.5	630.5	286.4	40.1	1.000179
15000.0	574.5	-11.3	-23.7	34.9	763.8	630.6	286.4	41.7	1.000175
15500.0	563.2	-11.2	-23.9	34.1	748.7	630.7	286.4	43.2	1.000172
16000.0	552.1	-12.0	-23.7	36.8	735.9	629.8	291.8	45.5	1.000169
16500.0	541.2	-12.7	-23.6	39.5	723.4	628.9	296.2	51.8	1.000166
17000.0	530.5	-13.5	-23.5	42.4	711.2	628.0	297.1	60.6	1.000164
17500.0	519.9	-13.8	-22.9	46.0	697.9	627.6	295.2	68.0	1.000161
18000.0	509.6	-13.9	-24.1	41.8	684.4	627.4	291.8	68.8	1.000157

STATION ALTITUDE 3997.30 FEET MSL
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GEODETIC COORDINATES
 32.48034 LAT DEG
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TABLE VIII. (CONT)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE DEWPOINT CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA		INDEX OF REFRACTION
							DIRECTION DEGREES(TN)	SPEED KNOTS	
18500.0	499.4	-15.1	-27.7	33.0	673.9	626.0	290.4	57.9	1.000154
19000.0	489.3	-16.5	-28.7	33.7	663.8	624.3	290.1	52.9	1.000151
19500.0	479.5	-17.8	-29.7	34.4	653.9	622.6	290.3	59.2	1.000149
20000.0	469.8	-19.2	-30.7	35.1	644.2	620.9	290.5	65.1	1.000146
20500.0	460.3	-20.6	-31.8	35.7	634.6	619.2	290.8	67.2	1.000144
21000.0	450.9	-21.9	-32.3	36.3	625.0	617.6	291.1	69.4	1.000142
21500.0	441.6	-23.2	-32.5	41.9	615.4	616.0	291.5	71.1	1.000139
22000.0	432.5	-24.5	-35.1	36.5	605.8	614.4	291.9	72.6	1.000137
22500.0	423.4	-25.5	-36.4	35.0	595.6	613.1	291.6	74.0	1.000134
23000.0	414.6	-26.6	-37.8	33.5	585.6	611.8	291.2	75.4	1.000132
23500.0	405.9	-27.6	-39.1	32.0	575.8	610.5	289.7	77.7	1.000130
24000.0	397.4	-27.7	-40.5	27.9	563.9	610.4	288.9	81.3	1.000127
24500.0	389.1	-27.3	-41.3	24.9	551.3	610.8	289.0	84.4	1.000124
25000.0	380.8	-28.4	-42.1	25.0	541.9	609.6	290.4	85.9	1.000122
25500.0	372.8	-29.4	-43.1	25.0	532.7	608.3	292.1	88.2	1.000119
26000.0	364.8	-30.5	-44.0	25.0	523.6	606.9	293.7	90.5	1.000117
26500.0	357.1	-31.5	-44.9	25.0	514.7	605.6	295.0	92.2	1.000115
27000.0	349.5	-32.6	-45.8	25.0	506.0	604.3	296.3	93.3	1.000113
27500.0	342.0	-33.5	-46.6	25.1	497.1	603.1	297.3	93.9	1.000111
28000.0	334.7	-34.1	-47.0	25.4	487.6	602.4	297.4	97.1	1.000109
28500.0	327.4	-34.7	-47.4	25.7	478.3	601.6	296.8	100.8	1.000107
29000.0	320.4	-35.2	-47.8	25.9	469.0	600.9	295.9	104.3	1.000105
29500.0	313.4	-35.4	-48.1	25.6	459.2	600.7	294.7	105.7	1.000103
30000.0	306.6	-35.6	-48.4	25.3	449.6	600.5	293.1	105.3	1.000101
30500.0	299.9	-35.8	-48.7	25.0..	440.2	600.2	291.3	105.4	1.000099
31000.0	293.4	-36.3	-50.7	20.9..	431.5	599.5	289.6	107.5	1.000096
31500.0	287.0	-36.8	-52.9	16.8..	423.0	598.9	288.9	111.9	1.000095
32000.0	280.7	-37.4	-55.6	12.8..	414.7	598.2	288.5	116.5	1.000093
32500.0	274.5	-37.9	-59.0	8.7..	406.5	597.6	288.4	121.4	1.000091
33000.0	268.5	-38.4	-64.2	4.7..	398.5	596.9			1.000089

.. AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

GEODETIC COORDINATES
32.48034 LAT DEG
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UPPER AIR DATA
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TABLE VIII. (CONT)

STATION ALTITUDE 3997.30 FEET MSL
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GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS		INDEX OF REFRACTION
		AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE			KNOTS	KNOTS				
33500.0	262.7	-38.9	-78.3	600	390.6	596.2					1.000087
34000.0	256.9	-39.9			383.6	595.0					1.000085
34500.0	251.2	-40.9			376.7	593.7					1.000084
35000.0	245.6	-41.9			369.9	592.4					1.000082
35500.0	240.1	-42.6			362.8	591.5					1.000081
36000.0	234.7	-42.8			355.0	591.3					1.000079
36500.0	229.4	-43.3			347.7	590.6					1.000077
37000.0	224.2	-44.0			340.9	589.7					1.000076
37500.0	219.2	-44.7			334.2	588.8					1.000074
38000.0	214.2	-45.4			327.7	587.9					1.000073
38500.0	209.3	-46.2			321.3	586.9					1.000072
39000.0	204.6	-46.9			315.0	586.0					1.000070
39500.0	200.0	-47.6			308.9	585.1					1.000069
40000.0	195.4	-48.4			302.7	584.1					1.000067
40500.0	190.8	-49.1			296.8	583.1					1.000066
41000.0	186.4	-49.9			290.9	582.1					1.000065
41500.0	182.1	-50.6			285.1	581.1					1.000064
42000.0	177.9	-51.4			279.5	580.1					1.000062
42500.0	173.7	-52.4			274.1	578.9					1.000061
43000.0	169.6	-53.4			268.9	577.5					1.000060
43500.0	165.6	-54.4			263.8	576.2					1.000059
44000.0	161.7	-55.5			258.8	574.8					1.000058
44500.0	157.9	-56.5			253.8	573.4					1.000057
45000.0	154.1	-57.5			249.0	572.1					1.000055
45500.0	150.5	-58.6			244.3	570.7					1.000054
46000.0	146.8	-59.7			239.7	569.1					1.000053
46500.0	143.3	-60.9			235.2	567.5					1.000052
47000.0	139.8	-62.1			230.7	566.0					1.000051
47500.0	136.4	-62.9			226.0	564.8					1.000050
48000.0	133.0	-63.8			221.3	563.7					1.000049

** AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 3997.30 FEET MSL
3 MAR. 78 1520 HRS MST
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UPPER AIR DATA
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TABLE VIII. (CONT)

GEODETIC COORDINATES
32.48034 LAT DEG
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GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES(TN)	SPEED KNOTS	INDEX OF REFRACTION
48500.0	129.7	-64.7		216.8	562.5			1.000048
49000.0	126.5	-65.5		212.2	561.4			1.000047
49500.0	123.4	-65.1		206.6	561.9			1.000046
50000.0	120.3	-64.8		201.2	562.4			1.000045
50500.0	117.3	-65.4		196.7	561.6			1.000044
51000.0	114.4	-66.2		192.6	560.5			1.000043
51500.0	111.6	-67.0		188.5	559.4			1.000042

STATION ALTITUDE 3997.30 FEET MSL
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MANDATORY LEVELS
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 TABLE IX.

GEODETIC COORDINATES
 32.48034 LAT DEG
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PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FFET	AIR DEGREES CENTIGRADE	DEWPOINT		DIRECTION DEGREES(TNL)	SPEED KNOTS
850.0	4721.	14.3	-3.5	29.	261.8	23.9
800.0	4386.	9.7	-4.3	37.	266.1	23.5
750.0	4128.	4.5	-6.2	45.	277.3	23.6
700.0	3953.	-1.2	-9.3	54.	293.3	24.7
650.0	3773.	-7.3	-8.0	95.	302.5	28.2
600.0	3599.	-10.2	-21.9	38.	290.8	36.7
550.0	3410.	-12.1	-23.7	37.	293.2	46.1
500.0	3240.	-15.0	-27.6	33.	290.4	58.0
450.0	3109.	-22.0	-32.3	39.	291.2	69.7
400.0	2984.	-28.3	-40.1	31.	289.0	80.4
350.0	2893.	-32.5	-45.8	25.	296.3	93.3
300.0	2826.	-35.8	-48.7	25.	291.1	105.7
250.0	2765.	-41.1				
200.0	2719.	-47.6				
175.0	2649.	-52.0				
150.0	2565.	-58.7				
125.0	2434.	-65.3				